

## AMSAT News Service Weekly Bulletins

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In this edition:

- \* ARISS SSTV Event Starts July 14
- \* Registration Opens for 43rd Annual AMSAT Space Symposium & Annual General Meeting
- \* ARISS Call for Proposals for School Contacts Began July 9
- \* 2025 President's Club Members Hit \$65,000 YTD
- \* SDR Provides New Capabilities For Next AMSAT CubeSats
- \* Changes to AMSAT-NA TLE Distribution
- \* ARISS News
- \* AMSAT Ambassador Activities
- \* Satellite Shorts From All Over

The AMSAT® News Service bulletins are a free, weekly news and information service of AMSAT, the Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on <http://www.amsat.org> publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: [ans-editor \[at\] amsat \[dot\] org](mailto:ans-editor@amsat.org).

Sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: <https://mailman.amsat.org/postorius/lists/ans.amsat.org/>

## ARISS SSTV Event Starts July 14

Amateur Radio on the International Space Station (ARISS) has announced Slow Scan Television (SSTV) Series 28 to run from July 14-20, 2025.

The theme will be the Apollo Soyuz mission and STS-51F which pioneered SSTV on Shuttles.

[cid:image003.jpg(a)01DBF322.35E884B0]

This series of 12 images will be transmitted from the ISS on 145.800 MHz using PD120 encoding. Software needed to decode the pictures is free and is available for PC's, Mac's, Android smartphones, and iPhones. Search "SSTV software" on Google and your phone's app store for a variety of options.

Transmissions from the ISS are powerful enough so images can be received with a handheld radio and its stock rubber duck antenna, albeit quite noisy. The addition of a simple homemade 3-element beam to the handheld can produce in pixel perfect images. Persons who are not familiar with SSTV operations can visit <https://amsat-uk.org/beginners/iss-sstv/>.

You are invited to upload decoded images in the ARISS gallery, area "ARISS Series 28 Apollo Soyuz and STS-51F" at: [https://ariss-usa.org/ARISS\\_SSTV/](https://ariss-usa.org/ARISS_SSTV/). Once you've submitted your pictures, just click on the dedicated button to apply for the official ARISS SSTV award.

Transmissions will begin on Monday, July 14 at 09:15 UTC (05:15 AM Eastern time). Transmissions will cease on Sunday, July 20 at 18:00 UTC (2:00 PM Eastern time).

[ANS thanks ARISS and AMSAT-UK for the above information.]

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Your 2025 AMSAT President's Club Coin Is Waiting!  
Celebrating the 40th Anniversary of Amateur Radio on Human Spaceflight  
Help Support GOLF and Fox-Plus.

[2025 PC Coin Set]

Join the AMSAT President's Club today and help  
Keep Amateur Radio in Space!  
<https://www.amsat.org/join-the-amsat-presidents-club/>

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Registration Opens for 43rd Annual AMSAT Space Symposium & Annual General Meeting  
Registration is now open for the 43rd Annual Space Symposium & Annual General Meeting to be held  
October 16-19 in Phoenix, Arizona. You can catch the ground-breaking presentations, enjoy good food and  
exchange ideas with your friends, old and new, in the world of amateur satellites. The overall schedule  
is:

[cid:image009.jpg(a)01DBF322.35E884B0]

Thursday, October 16th

- \* 0900 – 1700 Board of Directors Meeting

Friday, October 17th

- \* 0900 – 1200 Board of Directors Meeting
- \* 1300 – 1700 Symposium Presentations
- \* 1800 – 2100 Reception & Auction

Saturday, October 18th

- \* 0900 – 1200 Symposium Presentations
- \* 1300 – 1500 Symposium Presentations
- \* 1500 – 1700 Annual General Meeting
- \* 1800 – 1900 Reception
- \* 1900 – 2100 Banquet

Sunday, October 19th

- \* 0800 – 1000 Members Breakfast

Register Now and Save!

Good News! No price increase over previous years' Symposiums if you register now. Register for the  
Symposium before September 15 and save \$20.

Early Bird Registration

- \* Symposium Registration is \$75
- \* Banquet registration is \$55

Regular Registration

- \* Symposium Registration is \$85
- \* Banquet registration is \$65

Save \$20 and Register Today at:

<https://launch.amsat.org/events>.

Reserve Your Hotel Room Now!

- \* The Holiday Inn & Suites Phoenix Airport North is located minutes away from Phoenix Sky Harbor  
airport and features:
- \* Free airport shuttle and free parking
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- \* Fitness center
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- \* Fully updated rooms
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- \* Affordable rates of only \$129 plus tax.

Rooms at these Discounted Rates are Limited.  
You must make your reservation directly with the hotel to enjoy this special rate.  
Call Reservations at 877-424-2449.

Use Group Code: P7C and Group Name: AMSAT.

[ANS thanks AMSAT for the above information.]

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#### ARISS Call for Proposals for School Contacts Began July 9

The Amateur Radio on the International Space Station (ARISS) Program is seeking formal and informal education institutions and organizations, individually or working together, to host an Amateur Radio contact with a crew member on board the ISS. ARISS anticipates that the contact would be held between January 1, 2026 and June 30, 2026. Crew scheduling and ISS orbits will determine the exact contact dates. To maximize these radio contact opportunities, ARISS is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan.

[cid:image011.png(a)01DBF322.35E884B0]

Crew members aboard the International Space Station will participate in scheduled Amateur Radio contacts. These radio contacts are approximately 10 minutes in length and allow students to interact with the astronauts through a question-and-answer session.

The deadline to submit a proposal is August 29th, 2025. Proposal information and more details such as expectations, proposal guidelines and the proposal form can be found at [www.ariss.org](http://www.ariss.org)<<http://www.ariss.org>>.

An ARISS Introductory Webinar session will be held on July 30th at 7 PM ET. The Zoom link to sign up is: <https://us06web.zoom.us/meeting/register/E0qy2calSqudqufl09PL8A>

Questions should be directed to [education\(a\)ariss-usa.org](mailto:education(a)ariss-usa.org)<[mailto:education\(a\)ariss-usa.org](mailto:education(a)ariss-usa.org)>.

[ANS thanks Dave Jordan, AA4KN, ARISS PR for the above information]

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Need new satellite antennas?  
Purchase M2 LEO-Packs from the AMSAT Store.

[cid:image014.jpg(a)01DBF322.35E884B0]

When you purchase through AMSAT, a portion of the proceeds goes towards  
Keeping Amateur Radio in Space.  
<https://amsat.org/product-category/hardware/>

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#### 2025 President's Club Members Hit \$65,000 YTD

AMSAT President, Robert Bankston, KE4AL thanks 2025 President's Club members who have so far this year donated an amazing \$65,544. It is because of these especially generous donors that AMSAT has the resources to Help Keep Amateur Radio in Space. With the Fox-Plus and GOLF-TEE satellites nearing flight readiness, AMSAT especially appreciates these contributions to help purchase flight-proven parts, specialized software licenses, test fees, shipping and travel costs. It just couldn't be done without your support.

[cid:image015.jpg(a)01DBF322.35E884B0]

Contributors to date include:

Titanium (\$4,800+)  
Barry Baines, WD4ASW  
Alan Biddle, WA4SCA  
William Brown, K9LF  
Bruce Paige, KK5D0  
Walter Wittenberg, K0CEH

Platinum (\$2,400+)  
Ray Crafton, KN2K  
Douglas Tabor, N6UA

Gold (\$1,200+)  
Mark Hammond, N8MH  
Frank Karnauskas, N1UW  
John Kludt, K7SYS  
Glenn Miller, AA5PK  
Mary Lou Monteiro

Silver (\$600+)  
Joseph, Lynch, N6CL  
Jason Schwarz, N4JJS  
Scott Shaheen, WB800J

Bronze (\$300+)  
Keith Baker, KB1SF  
Edward Krome, K9EK  
Donald Pettigrew, K9ECT  
Dave Taylor, W8AAS

Core (\$120+)  
Mitch Ahrenstorff, AD0HJ  
Alan Boggs, K7IIV  
Richard Dittmer, KB7SAT  
David Hartrum, WA3YDZ  
Doug Papay, K8DP  
William Pesci, N4WLP  
Tim Pierce, N9PN  
Martin Shinko, KB3AEV  
Paul Stoetzer, N8HM  
Wayne Wagner, AG1A  
Jim Wilmerding, W2NNU

There are still nearly six months left to become a member of the 2025 President's Club. Join today at <https://www.amsat.org/product-category/amsat-presidents-club-donations/>.

[ANS thanks ANS for the above information.]

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#### SDR Provides New Capabilities For Next AMSAT CubeSats

Rich Gopstein, KD2CQ and Bill Schell, W2WZ highlighted new systems aboard AMSAT's new GOLF CubeSat at Hamvention 2025. Rich detailed the software defined radio (SDR) module while Bill explained how the SDR communicates with other systems on the upcoming GOLF satellites.

[cid:image016.png(a)01DBF322.35E884B0]

Rich explained, "The diagram above is a block diagram of the GOLF-TEE 3U CubeSat. The purple rectangle located in the middle of the diagram represents a (SDR). The Fox series of satellites before had transponders. Some were FM transponders. They acted like a repeater up in the sky. A single FM channel up with a single FM channel down. Other Fox satellites had linear transponders with wide bandwidths for several SSB or CW signals. Whatever you sent up to the satellite, either on 2 meters or 440, would come down on the other band.

"You could communicate with people that way, operate either FM or linear transponder, but that's all you could do with a transponder. On the other hand, the SDR allows us to do much more interesting things. Instead of the radio being permanently built into the hardware like it was in the Fox series, with an SDR it's all done in software. We don't have to change the hardware to implement different modes like SSTV or any of the voice, data or image operations we want to try. With an SDR we can do it in software. It's much easier much quicker to do.

"The SDR communicates with the RF matrix, represented by the light gray rectangle to the right of the SDR. The SDR communicates and is controlled by other circuits in the satellite through the Controller Area Network (CAN) bus shown to the left of the SDR. That control bus is used to activate and deactivate the radio system as well as command it to perform a variety of operations."

Specifically the SDR for the first GOLF satellites is the Ettus Research™ E310 Universal Software Radio Peripheral (USRP™). Rich explained, "The Ettus 310 SDR has two receive and two transmit antenna connections, which gives us a lot of flexibility in terms of what we want to do. For example, we can create cross-band transponders with it. We will use the radio at 5 GHz and 10 GHz, but it can't do 10 GHz natively. We need to implement some RF hardware externally to increase the original frequency range to 10 GHz.

"The Ettus runs on a Linux operating system so we will use GNU Radio software to program radio functions. So, if we want to have the radio operate as a transponder, for Morse code, telemetry, SSTV, or whatever, we can do it can through programming."

It is a free and open-source software development toolkit that provides signal processing blocks to implement software radios. Gopstein remarked, "GNU Radio makes programming easier! The talent and skills of AMSAT engineers are a precious resource. The GNU building block approach saves time while elevating consistency, quality and production rates for the benefit of all AMSAT satellite end users.

"We're using GNU Radio to support radio necessities such as the spacecraft transponder, telemetry and other modes of data transmission for the GOLF satellites. These are just a portion of the functions we're capable of using.

"Because the Ettus E310 SDR connects to the RF matrix, various antennas on the satellite can be connected to the SDR. As I said before, the output from the SDR will have a 10 GHz frequency converter and we will also have a solid-state power amplifier. That combination will increase frequency and output power for transmission at 10 GHz then sending the RF to an X band patch antenna."

"One element of RF operation that we're definitely going to try with the SDR is a 1 megabits per second (Mbps) data transmission. Another exciting experiment with the SDR could be 'five-and-dime' 5GHz/10GHz microwave radio transponder. On future missions, we expect to use the SDR to try all sorts of other functions with the SDR, yet to be determined," Rich concluded.

[cid:image017.png(a)01DBF322.35E884B0]

Next, Bill Schell, W2WZ went on to say, "This block diagram is a detailed look at part of the original diagram. It shows the Ettus E310 SDR connected to the main control processor of GOLF-TEE, the RT-IHU (Radiation Tolerant Internal Housekeeping Unit). The two are connected over the CAN bus, over which messages flow in each direction."

"The RT-IHU control software communicates with a python application running on the E310 called 'SDR Server'. This application receives request messages from the RT-IHU to execute various SDR related actions. It also sends E-310 related status and telemetry information back to the RT-IHU", Bill added.

According to Bill, "One of the most important actions the RT-IHU requests through SDR server is to start and stop GNU radio flows on the E-310. These flows are the software that implement the radio functions of the SDR. A flow might implement a transponder, the transmission of a periodic morse code ID, or the transmission of a data file to a ground station. Flows are created from building blocks in the GNU radio user interface. Common types of blocks include signal sources, filters, modulators, demodulators, FFT's, math operations, etc. Blocks are combined to implement a flow which accomplishes a particular radio or signal processing task."

"Other actions the SDR server performs are the sending of IMU and temperature data to the RT-IHU, receiving a file for later transmission (by a flow), shutdown, and other housekeeping functions", Bill

concluded.

[ANS thanks Rich Gopstein, KD2CQ and Bill Schell, W2WZ for the above information]

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Want to fly the colors on your own grid expedition?  
Get your AMSAT car flag and other neat stuff from our Zazzle store!

[cid:image018.png(a)01DBF322.35E884B0]

25% of the purchase price of each product goes towards  
Keeping Amateur Radio in Space  
[https://www.zazzle.com/amsat\\_gear](https://www.zazzle.com/amsat_gear)<[https://www.zazzle.com/amsat\\_gear](https://www.zazzle.com/amsat_gear)>

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#### Changes to AMSAT-NA TLE Distribution for July 11, 2025

Two Line Elements or TLEs, often referred to as Keplerian elements or keps in the amateur community, are the inputs to the SGP4 standard mathematical model of spacecraft orbits used by most amateur tracking programs. Weekly updates are completely adequate for most amateur satellites. TLE bulletin files are updated daily in the first hour of the UTC day. New bulletin files will be posted immediately after reliable elements become available for new amateur satellites. More information may be found at <https://www.amsat.org/keplerian-elements-resources/>.

This week there are no additions or deletions to the AMSAT TLE distributions.

[ANS thanks Joe Fitzgerald, KM1P, AMSAT Orbital Elements Manager for the above information]

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#### ARISS News

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

[ARISS News]

There are no scheduled contacts at this time.

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down). If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

The packet system is also active (145.825 MHz up & down).

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at  
<https://www.ariss.org/current-status-of-iss-stations.html>

The latest list of frequencies in use can be found at <https://www.ariss.org/contact-the-iss.html>

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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#### AMSAT Ambassador Activities

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

[AMSAT Ambassador News Logo]

August 21-24, 2025

Northeast HamXposition (HamX) & New England ARRL Convention

Best Western Royal Plaza & Trade Center

181 Boston Post Road W

Marlborough, MA 01752

<http://www.HamX.org>

W1EME, WD4ASW, WB1FJ

September 6, 2025

Greater Louisville Hamfest

Paroquet Springs Conference Centre

395 Paroquet Springs Drive

Shepherdsville, KY 40165

W4FCL

October 16, 17, 18, 19, 2025

AMSAT Board of Directors Meeting and 43rd Annual AMSAT Space Symposium & Annual General Meeting

Holiday Inn & Suites Phoenix Airport North

1515 North 44th Street

Phoenix, Arizona 85008

Details at <https://www.amsat.org/2025-symposium/>

[ANS thanks Bo Lowrey, W4FCL, Director – AMSAT Ambassador Program, for the above information]

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#### Satellite Shorts From All Over

\* AMSAT SA has announced that its 2025 Space Symposium will be held on August 2, 2025 and has issued the first call for papers. The theme of the symposium is “Embracing 68 years of space science innovation in Amateur Radio”. Papers are invited covering all aspects of space science and communication impacting and enhancing the Amateur Radio experience, from the technical to operational aspects. Presentations are typically 30 minutes with a 10-minute Q&A. Send proposals in MS Word to [admin\(a\)amsatsa.org.za](mailto:admin(a)amsatsa.org.za) by July 9, 2025. The symposium will be held online on Webex. Register at <https://forms.gle/vY9oGJekxzcg5j4c9>. [ANS thanks AMSAT-SA for the above information]

\* ESA, Telesat and the Science and Technology Facilities Council’s (STFC) RAL Space have reported a groundbreaking milestone in telecommunications technology, successfully establishing a Q-Band (38-39 GHz) link over LEO, between the RAL Space Chilbolton Observatory and the Telesat LEO 3 demonstration satellite. A Q-Band receiver was mounted on Chilbolton Observatory’s large 25m dish. The team at the observatory used this radar tracking capability to monitor the state of the satellite and its orbit during each pass. The team established a stable link with a collocated Ka-Band uplink antenna to the Telesat LEO 3 satellite. The Telesat LEO 3 satellite also provided frequency up-conversion to Q-Band, amplification and retransmission to ground. The Telesat satellite station transmitted a DVBs signal. Full story at <https://tinyurl.com/ANS-194-Q-Band>. [ANS thanks the ESA for the above information]

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Join AMSAT today at <https://launch.amsat.org/>

In addition to regular membership, AMSAT offers membership to:

- \* Societies (a recognized group, clubs or organization).
- \* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
- \* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
- \* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Frank Karnauskas, N1UW  
f.karnauskas [at] amsat [dot] org

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